

Claims

1. A method for transmitting common data from one sender to a plurality of receivers within a transmission session, comprising:
 - communicating at least one session parameter, which is related to said transmission of said common data within said transmission session, to said plurality of receivers via a communication protocol; and
 - transmitting said common data from said sender to said plurality of receivers within said transmission session.
2. The method according to claim 1, wherein said at least one session parameter is communicated to said plurality of receivers before or during the establishment of said transmission session.
3. The method according to claim 1, wherein said communication protocol is a Session Description Protocol SDP.
4. The method according to claim 1, wherein said common data is transmitted from said sender to said plurality of receivers at least partially over an Internet Protocol (IP) based network.
5. The method according to claim 1, wherein said common data is transmitted from said sender to said plurality of receivers in a broadcast or multicast operation.

6. The method according to claim 1, wherein said common data is streaming data or non-streaming data.
7. The method according to claim 1, wherein said common data is real-time data or non-real-time data.
8. The method according to claim 1, wherein said common data is transmitted from said sender to said plurality of receivers at least partially over a wireless network.
9. The method according to claim 8, wherein said wireless network is a mobile network that at least partially implements a Multimedia Broadcast/Multicast Service (MBMS) as defined by a Third Generation Partnership Project (3GPP).
10. The method according to claim 1, wherein said communication protocol contains a Forward Error Correction (FEC) attribute that specifies at least an FEC encoding scheme that is used for said transmission of said common data within said transmission session.
11. The method according to claim 10, wherein said FEC attribute further specifies an FEC encoding identifier.
12. The method according to claim 1, wherein said communication protocol contains an FEC machine attribute that specifies the location from which FEC decoding information can be downloaded.

13. The method according to claim 12, wherein said FEC decoding information has to be downloaded from said location by at least one of said plurality of receivers in an error-free fashion.
14. The method according to claim 12, wherein at least one of said plurality of receivers uses a Hypertext Transport Protocol (HTTP) or a Transport Control Protocol (TCP) based point-to-point connection to download said FEC decoding information.
15. The method according to claim 12, wherein at least one of said plurality of receivers uses a time dispersion function to determine a time when the downloading of said FEC decoding information from said location starts.
16. The method according to claim 1, wherein said communication protocol contains a forward error correction buffering attribute that specifies buffering requirements imposed on said plurality of receivers during the transmission of said common data from said sender to said plurality of receivers in said transmission session.
17. The method according to claim 16, wherein said buffering requirements are a buffering delay, a buffering memory size, or both.
18. The method according to claim 1, wherein said communication protocol contains a congestion control attribute that specifies a congestion control scheme

that is used for said transmission of said common data within said transmission session.

19. The method according to claim 1, wherein in a case that said common data is not correctly received at at least one of said plurality of receivers, at least parts of said common data are transmitted from a repair server to said at least one receiver within a repair session.
20. The method according to claim 19, wherein said repair session is a point-to-point or a point-to-multipoint repair session.
21. The method according to claim 1, wherein said communication protocol contains a repair Uniform Resource Identifier (URI) attribute that specifies a URI of said repair server.
22. The method according to claim 19, wherein said communication protocol contains a repair threshold attribute that specifies an error threshold, and wherein said error threshold is related to a reception quality of said common data as received by said plurality of receivers from said sender within said transmission session.
23. The method according to claim 22, wherein an entering into said repair session by one of said plurality of receivers depends on the relationship between a reception quality of said common data as received by said receiver from said sender within said transmission session and said error threshold.

24. The method according to claim 22, wherein said error threshold is quantified in terms of an error unit, an error value, a measurement window unit and a measurement window value.
25. The method according to claim 22, wherein said error threshold is quantified in terms of an error value.
26. The method according to claim 22, wherein a plurality of error thresholds is used for said transmission session, and wherein said error thresholds are explicitly or implicitly labelled.
27. The method according to claim 19, wherein said communication protocol contains a backoff-mode attribute that specifies a backoff mode, and wherein said backoff mode provides information on when a receiver that did not correctly receive said common data from said sender within said transmission session can start a request for said repair session.
28. The method according to claim 25, wherein said communication protocol contains a backoff-mode attribute that specifies a backoff mode, wherein said backoff mode provides information on when a receiver that did not correctly receive said common data from said sender within said transmission session can start a request for said repair session, wherein a plurality of backoff modes is used for said transmission session, and wherein at least two of said error thresholds are linked to at least two of said backoff modes, respectively.

29. The method according to claim 28, wherein said backoff modes are assigned to a receiver in dependence on the relationship between a reception quality of said common data as received by said receiver during said transmission session and a reception quality as demanded by said error thresholds.
30. The method according to claim 27, wherein said information is represented by a backoff unit, a backoff value and a backoff window.
31. The method according to claim 27, wherein said information is represented by a variable that indicates if absolute or relative timing is used, and a time value.
32. The method according to claim 27, wherein said information comprises an error threshold and three values X, Y and Z, and wherein at at least one of said plurality of receivers, if a reception quality of said common data as received by said at least one receiver from said sender within said transmission session is better than a reception quality dictated by said error threshold, said request for said repair session is started randomly within a time interval of duration X, wherein said interval starts at the end of said transmission session; and otherwise starting said request for said repair session randomly within a time period between Y and Y+Z, wherein Y is counted from the end of said transmission session.

33. The method according to claim 1, wherein said communication protocol can be used to communicate the number of said plurality of receivers to said plurality of receivers.
34. The method according to claim 19, wherein said communication protocol contains a repair type parameter attribute that specifies if said repair session can be a point-to-point session, a point-to-multipoint session, or both.
35. The method according to claim 19, wherein said communication protocol contains a repair token attribute that specifies the type of said repair session, or information on which parts of said common data that is not correctly received at at least one of said plurality of receivers within said transmission session will be transmitted from said repair server to said at least one receiver within said repair session, or both.
36. The method according to claim 1, wherein said communication protocol contains a content description attribute that specifies how said sender indicates to said plurality of receivers the URI where a content description of said common data is stored.
37. The method according to claim 1, wherein said transmission of said common data from said sender to said plurality of receivers is at least partially controlled by a File Delivery Over Unidirectional Transport FLUTE protocol.

38. The method according to claim 37, wherein said communication protocol contains a FLUTE channel attribute that specifies how many channels are used by the sender to transmit said common data to said plurality of receivers within said transmission session.
39. The method according to claim 37, wherein said communication protocol contains a FLUTE Transmission Session Identifier TSI attribute that specifies the value of a TSI within said transmission session.
40. The method according to claim 37, wherein said communication protocol contains a media description that specifies a media that is used within said transmission session.
41. The method according to claim 37, wherein said communication protocol contains a connection data that specifies an address of a channel used within said transmission session.
42. A computer program with instructions operable to cause a processor to perform the method steps of claim 1.
43. A computer program product comprising a computer program with instructions operable to cause a processor to perform the method steps of claim 1.
44. A system for transmitting data, comprising:
at least one sender; and

a plurality of receivers;
wherein said at least one sender and said plurality of receivers comprise means arranged for communicating at least one session parameter, which is related to said transmission of said common data within said transmission session, from said at least one sender to said plurality of receivers via a communication protocol; and
wherein said at least one sender and said plurality of receivers comprise means arranged for transmitting said common data from said sender to said plurality of receivers within said transmission session.

45. A sender for transmitting common data to a plurality of receivers within a transmission session, the sender comprising:

means arranged for communicating at least one session parameter, which is related to said transmission of said common data within said transmission session, to said plurality of receivers via a communication protocol; and

means arranged for transmitting said common data to said plurality of receivers within said transmission session.

46. A receiver for receiving common data that is transmitted from one sender to a plurality of receivers within a transmission session, comprising:

means arranged for receiving at least one session parameter, which is related to said transmission of

said common data within said transmission session, and which is communicated to said plurality of receivers via a communication protocol; and

means arranged for receiving said common data that is transmitted from said sender to said plurality of receivers within said transmission session.

47. A communication protocol, comprising:
a definition of at least one session parameter that is related to a transmission of common data from a sender to a plurality of receivers within a transmission session.